CONTROLLING DATA LINK LAYER ELEMENTS WITH NETWORK LAYER ELEMENTS

ABSTRACT

A network layer device controls provision of data link layer functionality by a data link layer device to provide a requested multimedia service to a subscriber. For example, the network layer device may control the performance of multicast elaboration by the data link layer device, or the queuing and forwarding of packets by the data link layer device to facilitate transmission of packets according to a Quality of Service class. The network layer device may send control messages to the data link layer device to dynamically configure a control object stored by the data link layer device, such as multicast filter information or a Quality of Service profile. The network layer device may be a service edge router, and the data link layer device may be a customer premises equipment device, e.g., a modem or wireless access point, or a switch, e.g., a digital subscriber line access multiplier.